Remarks

The present response is filed with a Request for Continued Examination (RCE), and is to the Office Action mailed in the above referenced case on May 6, 2004, made Final. Claims 1-12 are presented below for Examination. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sriram (U.S. 5,463,620), hereinafter Sriram, in view of Kalkunte et al. (6,470,016), hereinafter Kalkunte. Claims 8-12 are apparently rejected as being obvious in view of the rejection of claims 1-7, however, a direct statement of rejection for those claims still has not been provided by the examiner.

In response to the Examiner's rejection of applicant's claims, applicant herein provides argument that the prior art, either singly or in combination, does not produce applicants claimed invention, as embodied in the claims in their last amended form. Applicant points out and argues the key limitations of applicant's base claims, which distinguish clearly and unarguably over the prior art presented, and which still appear to be misunderstood by the examiner.

Applicant's prior amendments to the base claims necessitated the Examiner's new grounds of rejection in the instant Office Action, relying on the primary reference of Sriram for teaching substantially applicant's claimed limitations, with the exception that Sriram fails the teach wherein if one of the plurality of queues has no data traffic, said queue's data traffic capacity is allocated among other queues. The Examiner has relied on the reference of Kalkunte for teaching this deficiency, stating that it would have been obvious to combine Sriram with Kalkunte for the purpose of reallocating bandwidth to queues that have data to send.

Applicant respectfully traverses the Examiner's statements, and argues that the Examiner's broad interpretation of the art does not render applicant's invention obvious, because many of the teachings of the combined art are vague and

inconclusive, and cannot properly read on all of the limitations of applicant's base claims, as will be explained in further detail below.

Specifically, applicant wishes to direct the Examiner's attention to applicant's independent claims, which specifically recite at least one link on the network with a defined bandwidth value, a plurality of queues, each assigned a queue value related to preference, as well as a data limit value derived from the bandwidth value of the at least one network link, wherein if one of the plurality of queues has no data traffic, said queue's data traffic capacity is allocated among the other queues.

Referring now to the independent claims, the queue value assigned to each of the plurality of queues, is a packet transfer rate value used in determining which packets should be transferred out of the queues, and in what order, and an additional data limit value is assigned to each of the plurality of queues, as recited in the claims, derived from the bandwidth value for the at least one link. Applicant's invention provides limitations to data traffic at the core switching node by placing such additional traffic limits on the relevant queues, said additional limits based on a percentage of the link bandwidth value.

The distinction of applicant's invention over the prior art presented is that distinct advantages are provided over the approaches taught in the prior art presented for controlling queuing of data, such as priority queuing and weighted queuing, in that the bandwidth-related limitation on each queue prevents higher-priority queues in a priority-based queuing approach from dominating lower-priority queues to the extent that the lower-priority queues are unable to transfer data efficiently. By applying the bandwidth-related limit to each queue, higher-priority queues are prevented from transferring all of their packets without limit, regardless of the condition of the lower-priority queues, resulting in the ability of the lower-priority queues to transfer data more efficiently, and also allowing for control of traffic such that lower-capacity links are not overloaded.

The Examiner has stated in the detailed Action, that Sriram teaches applicant's assigned queue value, and also teaches assigning applicant's data limit value to each of the plurality of queues such that an amount of data being transferred onto the link from each queue is limited by the data limit value assigned to the queue, each of said data limit value's being derived from the bandwidth value for the at least one link. Applicant respectfully disagrees.

Although Sriram does teach assigning a transmission bit rate to the queues, as stated by the Examiner (Fig. 5), applicant argues that the simple fact that assigning a bit rate, and that the total bit rate of all the queues is equal to the total capacity of the link, as taught in Sriram, does not read on applicant's specific teaching, and claimed limitations, of assigning a queue value to each queue related to a data transfer preference, as well as assigning the data limit value to each of the queues, derived from the bandwidth value of the at least one link. As detailed and applicant's specification, with reference to Table 2, the bandwidth-constrained limits are applied to the weighted queues in applicant's improved weighted queuing approach of the invention, and each queue is permitted to forward traffic according to its weighted traffic allocation, up to the bandwidth constraint imposed according to the bandwidth-limit values.

Applicant wishes to refer the Examiner to the specification of Sriram, wherein it is described with reference to Fig. 6 (col. 8, lines 61-66), the server 48 contains a self-selection controller 50 connected to the queues for transmission of a predetermined number of cells from each queue in a predetermined cycle time. Applicant argues that this does not adequately teach or suggest assigning a queue value according to preference, nor does it teach assigning a bit rate limit related to the bandwidth value of the at least one output network link.

Applicant's invention teaches individual queues of the plurality of queues having a queue value, or priority value, assigned as well as a bit rate limit derived from the bandwidth value of the link, which are at most vaguely and inconclusively suggested in the teachings of the primary reference of Sriram.

Applicant therefore believes that the primary reference of Sriram is an invalid reference in itself, or in combination with Kalkunte, and should be withdrawn.

Applicant therefore believes that independent claims 1 and 7, in their last amended form as presented herein, are clearly and unarguably patentable over the prior art presented by the Examiner in this case, either singly or in combination, as argued above by applicant. Depending claims 2-6 and 8-12 are then patentable on their own merits, or at least as depended from a patentable claim.

As all of the claims standing for examination, as amended, have been shown to be patentable over the rejection and objections of the Examiner, applicant respectfully requests reconsideration after Final, and that the present case be passed quickly to issue. If there are any time extensions due beyond any extension requested and paid with this amendment, such extensions are hereby requested. If there are any fees due beyond any fees paid with the present amendment, such fees are authorized to be deducted from deposit account 50-0534.

Respectfully Submitted,

Karen M. Schramm et al.

by 

Donald R. Boys
Reg. No. 35,074

Central Coast Patent Agency
P.O. Box 187
Aromas, CA 95004
(831) 726-1457